

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel cell system comprising:
a fuel cell stack having a plurality of fuel cells connected in series;
a fuel supply device ~~that supplies~~configured to supply fuel to each fuel cell of ~~the said~~
fuel cells in said fuel cell stack based on a fuel supply amount which is a target value;
an air supply device configured to supply ~~that supplies~~ air to each of ~~the said~~ fuel cells
cell based on an air supply amount which is a target value; and
a controller configured to determine~~that determines~~ the fuel supply amount and the air
supply amount based on a power ~~which is~~ required by a load device and a voltage of each of ~~the~~
said fuel cells-cell;
wherein ~~the said~~ controller is configured to set~~sets~~ at least one of the fuel supply amount
and the air supply amount for each ~~of the said fuel cells-cell~~ based on the voltage of each ~~of~~
~~the said~~ fuel cells-cell so that a voltage variation of each ~~of the said fuel cells-cell~~ is minimized,
and
wherein ~~the~~ at least one of said fuel supply device supplies fuel to each ~~of the said~~ fuel
cells-cell based on the fuel supply amount of each ~~of the said fuel cells-cell~~, ~~and/or~~ and ~~the said~~
air supply device supplies air to each ~~of the said fuel cells-cell~~ based on the air supply amount of
each ~~of the said fuel cells-cell~~, and
wherein said controller is configured to calculate a voltage deviation for each said fuel
cell, for each said fuel cell, the voltage deviation being a difference between a voltage of said
fuel cell and an average value of the voltages of said plurality of fuel cells at each predetermined
time of a plurality of predetermined times, and configured to increase or decrease the fuel supply
amount of each said fuel cell according to the voltage deviation while keeping a total fuel supply
amount unchanged and/or increase or decrease the air supply amount of each said fuel cell
according to the voltage deviation while keeping a total air supply amount unchanged.
2. (Canceled)
3. (Currently Amended) The fuel cell system according to claim ~~[[2]]~~1, further
comprising a temperature measuring device ~~that measures~~configured to measure a temperature of
~~the said~~ fuel cell stack, ~~and~~

~~wherein the said~~ controller has a total fuel supply amount table for calculating the total fuel supply amount and/or a total air supply amount table for calculating the total air supply amount based on the temperature of ~~the said~~ fuel cell stack and the required power of the load device, wherein

~~the said controller receives~~ is configured to receive the temperature of ~~the said~~ fuel cell stack from ~~the said~~ temperature measuring device and the required power from the load device, and ~~calculates~~ is configured to calculate at least one of the total fuel supply amount ~~and/or~~ and the total air supply amount based on at least one of the total fuel supply amount table ~~and/or~~ and the total air supply amount table, and ~~sets~~ is configured to set an amount which is obtained by dividing at least one of the total fuel supply amount ~~and/or~~ and the total air supply amount by the total number of the fuel cells to an initial value of at least one of the fuel supply amount ~~and/or~~ and the air supply amount of each of ~~the said~~ fuel cells~~cell~~, and

~~the said controller repeats~~ is configured to repeat, at each predetermined time of ~~the every~~ plurality of predetermined ~~times~~, calculating the voltage deviation for each said fuel cell which is the difference between the voltage of each of the fuel cells and the average value of the voltages of the fuel cells, and obtaining at least one of the target fuel supply amount ~~and/or~~ and the target air supply amount by subtracting a value obtained by multiplying the voltage deviation by a predetermined value, from at least one of the fuel supply amount ~~and/or~~ and the air supply amount of each of ~~the said~~ fuel cells~~cell~~.

4. (Currently Amended) The fuel cell system according to claim 1, wherein ~~the controller calculates a voltage deviation which is a difference between a voltage of each of the fuel cells and an average value of the voltages of the plurality of fuel cells every predetermined time, and~~

when a maximum value of absolute values of the voltage deviations of ~~the said~~ plurality of fuel cells becomes smaller than a predetermined value, ~~the said controller calculates~~ is configured to calculate a generated power of ~~the said~~ fuel cell stack within a predetermined time, and ~~increases or decreases~~ decrease a total fuel supply amount or a total air supply amount according to a power difference between the generated power and the required power from the load device.

5. (Currently Amended) The fuel cell system according to claim 4, wherein the total fuel supply amount or the total air supply amount is increased or decreased by adding a value obtained by multiplying the power difference between the generated power of ~~the said~~ fuel cell stack and the required power of the load device by a predetermined value, to the total fuel supply amount or the total air supply amount.

6. (Currently Amended) The fuel cell system according to claim 1, further comprising a power converter ~~that controls~~configured to control ~~so that~~ a voltage or current of ~~the said~~ fuel cell stack ~~so that the voltage or current of said fuel cell stack~~ is equivalent to a target voltage or target current determined by ~~the said~~ controller, and ~~supplies~~is configured to supply a power outputted from ~~the said~~ fuel cell stack to the load device, wherein

when a minimum voltage value of the voltages of ~~the said~~ plurality of fuel cells is smaller than a predetermined voltage value, ~~the said~~ controller increases the target voltage to cause ~~the said~~ power converter to increase the voltage of ~~the said~~ fuel cell stack, or ~~the said~~ controller decreases the target current to cause ~~the said~~ power converter to decrease the current of ~~the said~~ fuel cell stack.

7. (Currently Amended) The fuel cell system according to claim 6, wherein when the minimum value of the voltages of ~~the said~~ plurality of fuel cells is smaller than the predetermined voltage value,

~~the said~~ controller adds a value obtained by multiplying a voltage difference between the minimum voltage value and the predetermined voltage value by a predetermined value, to the target voltage and ~~the said~~ power converter increases the voltage of ~~the said~~ fuel cell stack based on the target voltage, or

~~the said~~ controller subtracts a value obtained by multiplying the voltage difference between the minimum voltage value and the predetermined voltage value by a predetermined value from the target current and ~~the said~~ power converter decreases the current of ~~the said~~ fuel cell stack based on the target current.